

MOP DEVICE HAVING CHANGEABLE ABRASIVE STRIP

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a mop device, and more
5 particularly to a mop device having an abrasive surface member
changeably or detachably attached to the mop device.

2. Description of the Prior Art

Various kinds of typical mop devices have been developed and
provided for mopping the ground or the surfaces to be cleaned, and
10 normally comprise a spongy member solidly attached to a support
element, for cleaning purposes.

For example, U.S. Patent No. 5,483,720 to Decoopman et al.
discloses one of the typical mop devices which also comprises a
spongy member solidly attached to a support element, for cleaning
15 purposes. The spongy member may not be detached or disengaged
from the support element, and thus may not be changed with the
new ones when the previous spongy member has been damaged or
worn out.

U.S. Patent No. 5,488,750 to Vosbikian et al. discloses another
20 typical mop device comprising an abrasive surface strip changeably
or detachably attached to the mop device, for engaging with and for
mopping the ground or the surfaces to be cleaned. The abrasive
surface strip may be changeably or detachably attached to the mop
device, and may thus be changed with the new ones when the
25 previous spongy member has been damaged or worn out.

However, the spongy member is also solidly attached to the
support element, and may not be detached or disengaged from the

support element, and thus may not be changed with the new ones when the previous spongy member has been damaged or worn out.

- In addition, the abrasive surface strips normally include a planar structure made of woven or non-woven cloth materials,
- 5 which may not be used to effectively mop or clean the ground or the surfaces that are required to be cleaned.

The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional mop devices.

SUMMARY OF THE INVENTION

10 The primary objective of the present invention is to provide a mop device including an abrasive surface member that may be changeably or detachably attached to the mop device.

15 The other objective of the present invention is to provide a mop device including an abrasive surface member that may be used to effectively mop the ground or the surfaces to be cleaned.

20 In accordance with one aspect of the invention, there is provided a mop device comprising a handle including a support element attached to bottom thereof, an abrasive surface member, and means for detachably attaching the abrasive surface member to the support element. The abrasive surface member includes a resilient element and a lower cover member secured together, to form at least one swelling and at least one depression in the abrasive surface member, and to effectively engage with ground or surfaces to be cleaned.

25 The lower cover member includes at least one side flange extended beyond the resilient element and foldable to engage with the support element. The side flange of the lower cover member

includes at least one notch formed therein to define at least one flap therein, and to facilitate folding and engaging of the side flange of the lower cover member onto the support element.

The lower cover member includes at least one securing device
5 attached onto the side flange thereof, to engage with and to secure to the support element.

The abrasive surface member includes an upper cover sheet secured onto the resilient element with at least one coupling element. The detachably attaching means includes at least one coupling
10 device attached to the upper cover sheet of the abrasive surface member, to secure to the support element.

The support element includes a coupling device attached thereto, to engage with the coupling device of the upper cover sheet of the abrasive surface member, and to secure the abrasive surface
15 member to the support element. The support element includes a sponge member attached to a bottom portion thereof, and the coupling device is attached to the sponge member of the support element.

Further objectives and advantages of the present invention will
20 become apparent from a careful reading of the detailed description provided hereinbelow, with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a mop device in accordance
25 with the present invention;

FIG. 2 is an enlarged partial plan view of the mop device;

FIG. 3 is a partial exploded view of an abrasive surface

member of the mop device;

FIG. 4 is a perspective view of the an abrasive surface member of the mop device; and

5 FIG. 5 is a perspective view illustrating the operation of the mop device.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, and initially to FIG. 1, a mop device in accordance with the present invention comprises a handle 10, a support element 11 attached to the bottom of the handle 10 with such as a typical pivot joint or hinge 12, to allow the support element 11 to be pivoted or rotated relative to the handle 10.

A resilient or sponge member 13 may further be provided and attached to the bottom portion 14 of the support element 11, for resiliently or flexibly contacting with the ground or the other surfaces to be cleaned. A coupling device 15, such as a hook-and-loop coupling device 15 may further be provided and attached to the bottom portion 16 of the resilient or sponge member 13.

The mop device in accordance with the present invention further comprises an abrasive surface member 30 to be changeably or detachably and directly attached to the bottom portion 14 of the support element 11, or attached to the bottom portion 16 of the resilient or sponge member 13.

As shown in FIGS. 2-4, the abrasive surface member 30 includes an upper cover sheet 31, such as a water-proof cover sheet 31 provided on the upper portion thereof, and one or more coupling devices 32, such as a hook-and-loop coupling devices 32 attached onto the cover sheet 31, for engaging with the corresponding

hook-and-loop coupling device 15, and thus for detachably attaching the cover sheet 31 of the abrasive surface member 30 to the resilient or sponge member 13 or directly to the support element 11.

5 A resilient or sponge element 33 and a lower cover member 34 are attached to and secured to the bottom of the cover sheet 31 with one or more coupling elements 35 (FIG. 2), such as stitches, ultrasonic welding elements, staples, or the like, particularly by ultrasonic welding processes, in order to form one or more swellings
10 36 and one or more depressions 37 in the bottom of the abrasive surface member 30, best shown in FIGS. 2 and 4.

The lower cover member 34 of the abrasive surface member 30 is preferably made of woven or non-woven cloth materials, and includes one or two side edges or flanges 38 extended laterally or
15 outwardly beyond the resilient or sponge element 33, for being folded and engaged onto the upper portion 17 of the support element 11, as shown in FIGS. 1 and 5.

It is preferable that each of the side edges or flanges 38 includes one or more notches 39 formed therein to form or define
20 one or more flaps 40 therein, and for allowing the lower cover member 34 of the abrasive surface member 30 to be easily folded and engaged and attached onto the support element 11.

For example, one or more securing devices 41, such as the hook-and-loop securing devices or adhesive materials 41 may be
25 attached onto the side edges or flanges 38 or the flaps 40 of lower cover member 34 of the abrasive surface member 30, for engaging with the upper portion 17 of the support element 11, and thus for

attaching the abrasive surface member 30 onto the support element
11.

In operation, as shown in FIGS. 2 and 5, due to the provision or
the formation of the swellings 36 and/or the depressions 37 in the
5 bottom of the abrasive surface member 30, the dirt 70 may be easily
mopped and cleaned and collected within the depressions 37 of the
abrasive surface member 30, such that the abrasive surface member
30 may be used to effectively mop and clean the ground or the
surfaces to be cleaned.

10 Accordingly, the mop device in accordance with the present
invention includes an abrasive surface member that may be
changeably or detachably attached to the mop device, and that may
be used to effectively engage with and mop the ground or the
surfaces to be cleaned.

15 Although this invention has been described with a certain
degree of particularity, it is to be understood that the present
disclosure has been made by way of example only and that
numerous changes in the detailed construction and the combination
and arrangement of parts may be resorted to without departing from
20 the spirit and scope of the invention as hereinafter claimed.